

Application No. 10/645,312  
Amendment dated October 4, 2005  
Reply to Office Action of July 6, 2005

Docket No.: 58288(72021)

### REMARKS

The Applicants appreciate the Examiner's thorough examination of the subject application. Applicants confirm the provisional election of Group I (claims 1-14 and 26) with traverse. Claims 15-25 are withdrawn. Claims 1 and 11 have been amended. Claims 3 and 4 have been canceled. Accordingly, claims 1, 2, 5-14 and 26 are pending in the application. Applicants request reconsideration of the subject application based on the following remarks.

The claim 1 definition of R<sub>5</sub> has been amended to correct a typographical error in the recitation of "hydroxy", and to add "hydrogen" as a definition. Support for the addition of "hydrogen" can be found in the examples provided in the specification as originally filed (e.g., page 53, compound 1). Thus, no new matter has been introduced by the instant amendments.

Amendment of any claim herein is not to be construed as acquiescence to any of the rejections/objections set forth in the instant Office Action, and was done solely to expedite prosecution of the application. Applicants make these amendments without prejudice to pursuing the original subject matter of this application in a later filed application claiming benefit of the instant application, including without prejudice to any determination of equivalents of the claimed subject matter.

As an initial matter, Applicants appreciate the indication of allowable subject matter, i.e., that claim 26 is allowable as written, and that claims 3 and 11 would be allowable if amended.

Upon allowance of the claims directed to newly reformulated heteroaryl pyridine-pyrazine compounds and pyrimidine-pyrazine compounds, Applicants respectfully request rejoinder of the subject matter excised by the Examiner's oral restriction requirement of claims 15-25, e.g., the rejoinder of claims directed to methods of use, pharmaceutical compositions, and packages.

### Specification Objections

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The abstract was objected to because it did not provide a generic structure. Applicants have amended the abstract to include the generic formula found in claim 1. Applicants respectfully request withdrawal of this objection.

**Claims Rejections – 35 U.S.C. §112**

Claims 12-14 were rejected under 35 U.S.C. §112, second paragraph, allegedly because there is no “standard in vitro CRF receptor binding assay.”

Applicants respectfully traverse and indicate that the specification as filed (page 107) provides for “the following assay is defined herein as a standard in vitro CRF receptor binding assay.” The specification further describes the standard assay at page 107. Because the application as filed provides the protocol for the “standard in vitro CRF receptor binding assay,” Applicants respectfully request withdrawal of the rejection.

**Claims Rejections – 35 U.S.C. §102**

Claims 1, 2, 4-9, and 12-14 were rejected under 35 U.S.C. §102(a) as allegedly being anticipated by Yoon et al. (WO 01/60806). The Office Action asserts that Yoon discloses CRF<sub>1</sub> receptor agonists wherein R<sub>x</sub> is 1-ethylpropyl; R<sub>1</sub> is either ethyl or methoxy; R<sub>3</sub> is methyl, ethyl, chloro, or methoxy; J and K are both CH; R<sub>5</sub> is methyl, chloro, or methoxy; R<sub>7</sub> is methoxy, methyl, or chloro; R<sub>8</sub> is hydrogen or methyl; and G is NH or O.

Claim 1 as amended does not encompass any compounds recited in Yoon. Applicants have amended claim 1 to incorporate nitrogen into the definition of “J”, and to remove “C<sub>1-4</sub> alkoxy” from the definition of R<sub>7</sub>. More particularly, claim 1 as amended provides heteroaryl pyridine-pyrazine compounds, and pyrimidine-pyrazine compounds, in which the R<sub>7</sub> is not an alkoxy residue. Claim 1 therefore does not embrace the phenyl-pyrazine compounds found in Yoon et al. Additionally, Applicants have amended claim 11 to remove compounds that are no

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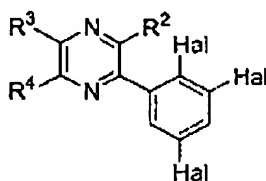
longer encompassed by the scope of the claim 1 amendment. Thus, the rejection is traversed and withdrawal of the §102 rejection is requested.

### Claims Rejections – 35 U.S.C. §103

Claims 10 and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yoon et al. (WO 01/60806). It is alleged that the  $R_1$  group in claim 10, and the compounds provided in claim 11 are obvious in view of Yoon. It is further alleged that the deficiency in Yoon with respect to claims 10 and 11 of the instant application, is that no specific compound of the instant application is exemplified in Yoon et al. WO 01/60806. The Office Action also indicates at pages 9 and 10 that one of ordinary skill would look to the exemplified compounds in order to determine how the general teachings apply to the invention.

Claims 1 and 11, as amended, provide compounds having a pyridine-pyrazine and pyrimidine-pyrazine ring system. Moreover, the claims as amended exclude phenyl-pyrazine compounds. Although Yoon discloses a handful of compounds in which Ar is a heteroaryl, one of ordinary skill in the art would not have been motivated to make or use the compounds of the claimed invention. Thus, claims 10 and 11 are patentable over Yoon.

Claims 1 and 2 were rejected under 35 U.S.C. §103(a) as being unpatentable over Cox et al. (WO 98/38174). The Examiner has indicated that Cox provides for compounds of the following formula, wherein Hal refers to halogen;  $R^2$  is  $NH_2$  or  $NHC(O)R^a$ ;  $R^3$  is  $NR^bR^c$  or  $NIIC(O)R^a$  or hydrogen,  $R^d$  is hydrogen,  $C_{1-4}$  alkyl, or  $C_{1-4}$  alkyl substituted by one or more halogen atoms, CN,  $CH_2OH$ ,  $CH_2OR^d$  or  $CH_2S(O)_xR^d$ .



It is further alleged at page 12, lines 6-8 and page 13, lines 7-12 of the instant Office Action, that the only distinction between Cox and the instant invention is that Cox does not exemplify a compound wherein the  $R^3$  group is  $NR^bR^c$ , wherein  $R^b$  is hydrogen and  $R^c$  is  $C_{1-4}$  alkyl.

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Applicants have amended claims 1 and 11 to include compounds with pyridine-pyrazine functionalities, and pyrimidine-pyrazine core ring systems. The distinguishing feature between the two applications is therefore based on the core backbone of the compounds. The teachings of Cox et al. do not include any compounds with heteroaryl ring systems at the Ar position. Thus, Applicants' claim 1 compounds are distinct from Cox, and are not taught or suggested by Cox. Applicants respectfully request withdrawal of this rejection.

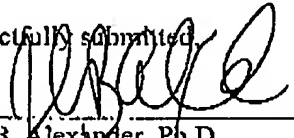
#### Conclusion

Thus, for at least the reasons recited *supra*, Applicants request withdrawal of the §112, §102, and §103 rejections and reconsideration of the application.

Although it is not believed that any additional fees are needed to consider this submission, the Examiner is hereby authorized to charge our deposit account no. 04-1105 should any fee be deemed necessary.

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Respectfully submitted,

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